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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/100,088	06/19/98	BROWN	P 1606.0020001

LMC1/1123  
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EXAMINER

JONES, H

ART UNIT

PAPER NUMBER

2763

DATE MAILED:

11/23/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
09/100,088

Applicant(s)

Brown

Examiner

Hugh Jones

Group Art Unit  
2763



☒ Responsive to communication(s) filed on Oct 4, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1-3 is/are pending in the application

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-3 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2-3

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- claim 1, limitation (2): what is the significance of the "successive start date"? Does this mean an alternate date?
- claim 1, limitation (4): how is the determining carried out - the connection between determining and assigning is not clear;
- claim 2: how is the calculating" accomplished?

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over [Skeirik or Atherton (Applicant's IDS) or Iwasaki et al. (Applicant's IDS) or Litt et al. (Applicant's IDS) or Furukawa et al. or Carrette et al.] in view of the taking of official notice.

5. The examiner notes that the claims, which are very broad, are directed to process control simulation and scheduling. The examiner has obtained hundreds of patents regarding the modeling of process control and scheduling. There are also many patents on the use of expert systems as per process control and modeling.

6. Skeirik discloses: a process control system with reconfigurable expert rules and control modules. From the abstract;

"An integrated system for process control in which a process supervisor procedure (which is preferably the top-level procedure) is configured as a modular software structure, with modules that can be revised by a user at any time, without significantly interrupting the operation of the process supervisor. The modular software can define control parameters for many process control procedures, and can retrieve data from many sources (preferably including a historical database of process data, which can provide time-stamped data). The supervisor can also call on various expert subprocedures. Preferably the expert subprocedures can also be modified by an authorized user at any time, by calling up and editing a set of natural-language rule templates which correspond to the rules being executed by the expert subprocedure."

See also: fig. 1-2, 7-8, 15-18; col. 1-18 (details concerning the expert system and its use in process control).

7. Atherton discloses: real world modeling and process control. Col. 1 discloses the background; col. 2 discloses details concerning "due dates" and scheduling theory; col. 3 discloses

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simulation models of factories and their use in schedule generation; col. 4 discloses details concerning batch, sampling, and process control; col. 4 discloses the taking into account of equipment reliability and other details involved in process modeling; col. 10 discloses an algorithm for process modeling; cols. 11-16 disclose details concerning sequences, batching, scheduling rules.

8. Iwasaki et al. discloses: "Production system with order of processing determination". See: col. 2-3 (details concerning scheduling a processing line); col. 6 (use of sampling data).

9. Litt et al. disclose: "Expert system and method for batch production scheduling and planning." See: abstract; fig. 2-7; col. 1-2 (details concerning the use of rule-based expert systems in process scheduling, batch scheduling, delivery dates, production constraints).

10. Furukawa et al. disclose a production control system. See: abstract; fig. 3a (scheduling and its interaction with the production line), fig. 3c (lead time), fig. 4a (scheduling), fig. 4c (overview), fig. 5 (scheduling), fig. 20-23 (details about scheduling), fig. 31 (table), fig. 41 (tables, pointers, scheduling), fig. 60-63 (overview); see text corresponding to said figures.

11. Carrette et al. disclose: Method and apparatus for real-time control. See: abstract; fig. 1-2, 4-8, 13, 21-24 and corresponding text.

12. [Skeirik or Atherton (Applicant's IDS) or Iwasaki et al. (Applicant's IDS) or Litt et al. (Applicant's IDS) or Furukawa et al. or Cappelaere et al. or Carrette et al.] disclose all of the limitations of the claims except that they do not disclose details concerning identifying, assigning and calculating the volume of a solution which is to be processed. However, official notice is

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taken that it would have been obvious to one of ordinary skill in the art at the time of the invention that such details would be included when scheduling control of chemical or biopharmaceutical processing.

*Conclusion*

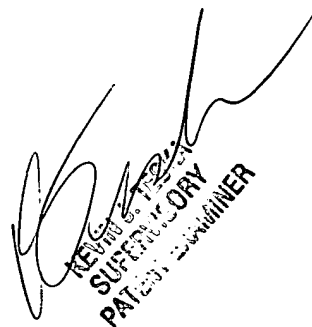
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Cappelaere et al. discloses a computer system and method for signal control prioritizing and scheduling;
- Krivoshein et al. disclose a process control system including automatic configuration of devices;
- Bauman et al. disclose an interruptibility/priority scheme for artificial intelligence software shell for plant operation simulation.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Hugh Jones whose telephone number is (703) 305-0023.

Dr. Hugh Jones

November 13, 1999

  
RECEIVED  
SUPERVISORY  
PATENT EXAMINER